

REMARKS

Applicants respectfully request reconsideration of the application in view of the foregoing amendments and following remarks. Claim 7 has been cancelled. Claims 1-6 are currently pending in this application.

Claims 1-5 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,018,670 to Chalmers.

Applicants respectfully traverse this rejection, and request reconsideration of the art. Chalmers discloses a conventional mixing tube that is positioned longitudinally by inserting it into the body 37 until the upper surface of the nozzle 87 bottoms out against a corresponding surface in insert 72. (See Figure 9 of Chalmers, and column 5, lines 14-16.) In accordance with conventional practice, an o-ring 94 is dropped into the bore into which the nozzle is inserted. The o-ring is not rigidly attached to the nozzle 87, and while shown in an uppermost position within the bore, it may be located at any point between the top of the collet and the position shown, the o-ring being compressed to perform a sealing function only. Again, the o-ring is not rigidly attached to the nozzle 87, and does not locate the nozzle 87 longitudinally.

Furthermore, collet 93 of Chalmers is not rigidly fixed to an outer surface of the mixing tube. When tightened, collet 93 locates the nozzle 87 radially. The operator holds the nozzle 87 in place while tightening collet 93. When the collet 93 is released, nothing in Chalmers holds the nozzle 87 within the body, and the nozzle 87 is free to drop out of the assembly. In order to install a nozzle 87 in a conventional system such as that shown in Chalmers, it is necessary to hold the nozzle 87 up within the body such that the top surface of the nozzle 87 is in contact with the insert 72.

In contrast, the mixing tube of the present invention has a collar rigidly fixed to an outer surface of the mixing tube, as recited in claim 1. As discussed above, the nozzle of Chalmers does not have a collar rigidly fixed to an outer surface of the mixing tube. The difference is significant. As best seen in Figure 1, the rigidly affixed collar 52 of the present invention locates the mixing tube 49 in a desired longitudinal position by bottoming out either against o-ring 73 or directly against a shoulder of cutting head 22. (See page 9, lines 1-9 of the specification.) Furthermore, by providing a rigidly affixed collar to the mixing tube in

accordance with claim 1 of the present invention, the collar may rest on a top surface of the collet. Because the mixing tube is fixed to the collar, when the collet is loosened, the collar prevents the mixing tube from dropping out of the assembly, as occurs in conventional systems. (See page 9, lines 14-16 of the specification.) The mixing tube as provided in claims 1-6 of the present application therefore provides many advantages over the conventional mixing tube shown in Chalmers, and neither Chalmers nor any of the other cited references disclose a mixing tube having a collar rigidly fixed to an outer surface of the mixing tube that locates the mixing tube longitudinally in a desired location. Claim 1, and the claims that depend therefrom are therefore not anticipated by the cited art.

As there is no teaching or suggestion in Chalmers to provide a collar rigidly fixed to an outer surface of the mixing tube, there is also no teaching or suggestion in Chalmers that the collar should be located at a desired position relative to a top surface of the mixing tube as recited in claim 2, nor that a wall thickness should be 0.01 to 0.2 inch, as recited in claim 3. While the o-ring of Chalmers is cylindrical and an outer surface of the collet in Chalmers is frusto-conical, these facts do not anticipate or render obvious the addition of a rigidly affixed collar to a mixing tube, an outer surface of the collar being either substantially cylindrical or frusto-conical, as recited in claims 4 and 5 of the present application.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Chalmers in view of Fredrick. At a minimum, claim 6 is patentable as being dependent on claim 1, for the reasons discussed above.

Applicants respectfully submit that claims 1-6 are allowable for the reasons discussed above. If questions remain, the Examiner is invited to contact the undersigned at the telephone number listed below.

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The Director is authorized to charge any fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC



Lorraine Linford
Registration No. 35,939

Enclosure:
Postcard

701 Fifth Avenue, Suite 6300
Seattle, Washington 98104-7092
Phone: (206) 622-4900
Fax: (206) 682-6031

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